--9. A particulate matter combustion catalyst according to claim 3, wherein said NO oxidation catalyst and NO_2 decomposition catalyst are carried on a particulate matter filter.--

B

--10. A particulate matter combustion catalyst according to claim 4, wherein said NO oxidation catalyst and NO_2 decomposition catalyst are carried on a particulate matter filter.--

REMARKS

Claims 1 - 10 are pending. By this Preliminary Amendment, the specification is amended and claims 7-10 are added. The amendments are supported by the specification at page 6, lines 22-27, and Fig. 1. No new matter is added.

Early and favorable consideration of the application is respectfully requested.

The attached Appendix includes marked-up copies of the specification (37 C.F.R. 1.121(c)(1)(ii)).

Respectfully submitted,

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Attached: Appendix
Date: April 25, 2002

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APPENDIX

Changes to Specification:

Page 4, lines 16-18:

Fig. 1(a) is a schematic illustration of a wall cross-section of a ~~monolith~~ filter carrying the catalysts of the invention.

Page 4, lines 19-21:

Fig. 1(b) is a schematic illustration of a cross-section of a ~~monolith~~ filter carrying the catalysts of the invention.

Page 6, lines 26-28:

The particulate matter filter may be, for example ~~, a~~ cordierite wall-flow type ~~monolith~~ filter, and an embodiment of a filter using the catalyst of the invention is shown in Fig. 1. The wall-flow type filter is, for example, one of any two neighboring spaces is closed by a plug on the exhaust gas downstream side, and the other one is closed by a plug on the exhaust gas upstream side.

Page 6, lines 29-35:

In this embodiment, the NO oxidation catalyst and NO_2 decomposition catalyst of the invention reside as a coated layer covering the wall columns of the ~~monolith~~ filter. In the coated layer, the NO oxidation catalyst and NO_2 decomposition catalyst may reside in a randomly mixed state as shown in Fig. 2(a), or they may reside in layers as shown in Fig. 2(b).

Page 7, lines 2-10:

Tungstic acid/zirconia (WO_3/ZrO_2), silica, silica-alumina, MFI zeolite (SiO_2/Al_2O_3 = 40), dealuminized Y zeolite (SiO_2/Al_2O_3 = 200), γ-alumina, zirconia and Ba/γ-alumina were prepared as carriers, and after coating each of the carriers onto monolith substrates, each carrier was impregnated with a dinitrodiamine Pt solution and subjected to drying and

prefiring followed by 1 hour of firing at 650°C to obtain catalysts with 2 g of Pt loaded on each carrier per liter volume of ~~monolith~~ substrate.

Page 7, table 1:

Table 1 Comparison of NO oxidation performance

Catalyst carrier	NO oxidation rate (%)	
	200°C	250°C
WO_3/ZrO_2	64	93
Silica	45	92
Silica-alumina	34	92
MFI zeolite	66	92
Y zeolite	62	93
γ-alumina	15	90
Zirconia	17	90
Ba/γ-alumina	8.5	20

Catalyst component: 2 g Pt/1L filter~~monolith~~

Page 8, lines 25-28:

The resulting slurry was coated and dried onto a filter ~~monolith~~ substrate, and then fired at 650°C for 1 hour to form a layer containing WO_3/ZrO_2 powder and Ba/γ-alumina powder on the filter ~~monolith~~ substrate.

Page 8, lines 29-34:

Next, the layer was impregnated with a dinitrodiamine Pt aqueous solution, and then further impregnated with a Rh nitrate aqueous solution and fired at 500°C for 1 hour to obtain a catalyst according to the invention carrying 2 g of Pt and 0.1 g of Rh per liter of filter ~~monolith~~ substrate.

Page 9, lines 14-17:

The resulting slurry was coated and dried onto a filter ~~monolith~~ substrate, and then fired at 650°C for 1 hour to form a layer containing WO_3/ZrO_2 powder and Fe/γ-alumina powder on the filter ~~monolith~~ substrate.

Page 9, lines 18-23:

Next, in the same manner as Example 1, the layer was impregnated with a dinitrodiamine Pt aqueous solution, and then further impregnated with a Rh nitrate aqueous solution and fired at 500°C for 1 hour to obtain a catalyst according to the invention carrying 2 g of Pt and 0.1 g of Rh per liter of filter ~~monolith~~ substrate.

Page 10, lines 2-4:

The resulting slurry was coated and dried onto a filter ~~monolith~~ substrate, and then fired at 650°C for 1 hour to form a layer containing Ba/γ-alumina powder.

Page 10, lines 5-10:

Next, the layer was impregnated with a dinitrodiamine Pt aqueous solution, and then further impregnated with a Rh nitrate aqueous solution and fired at 500°C for 1 hour to obtain a comparison catalyst carrying 2 g of Pt and 0.1 g of Rh per liter of filter ~~monolith~~ substrate.

Page 10, lines 19-21:

The resulting slurry was coated and dried onto a filter ~~monolith~~ substrate, and then fired at 650°C for 1 hour to form a layer containing silica powder.

Page 10, lines 22-27:

Next, the layer was impregnated with a dinitrodiamine Pt aqueous solution, and then further impregnated with a Rh nitrate aqueous solution and fired at 500°C for 1 hour to obtain a comparison catalyst carrying 2 g of Pt and 0.1 g of Rh per liter of filter ~~monolith~~ substrate.

Page 10, line 34- page 11, lines 1-10:

The proportion of NO_2 decomposed to NO by the catalysts of Examples 1-2 and Comparative Examples 1-2 above was measured using diesel engine exhaust gas. Lean (air/fuel ratio = 30) and rich (air/fuel ratio = 14) operating conditions were employed, repeatedly alternated for 30 seconds and 1 second, respectively, and the NO_2 decomposition rate was measured based on the exhaust gas composition shown below, under lean conditions. The results are shown in Table 2. For the catalyst of Comparative Example 2,

there was provided a particulate matter-accumulated ~~monolith~~ filter (without catalyst) downstream from the catalyst, and the NO_2 decomposition rate as measured at the outlet port of the ~~monolith~~ filter.

Page 11, table 2:

Table 2 Comparison of NO_2 decomposition performance

	Catalyst		NO_2 decomposition rate (%)	
	NO oxidation catalyst	NO_2 decomposition catalyst	200°C	250°C
Example 1	$Pt/WO_3/ZrO_2$	Pt/Ba/γ-alumina	85	94
Example 2	$Pt/WO_3/ZrO_2$	Fe/γ-alumina	88	90
Comp. Ex.1	Pt/Ba/γ-alumina		78	88
Comp. Ex.2	Upstream Pt/silica + monolith filter		2.1	3.5

Catalyst components: (2 g Pt + 0.1 g Rh)/1L <u>filter</u>~~monolith~~

Page 11, lines 17-27:

The results shown in Table 2 demonstrate that the catalysts of the invention exhibit very high NO_2 decomposition performance even at temperatures below 300°C. On the other hand, with Comparative Example 1 which had Pt and Ba both present on the γ-alumina carrier, the NO_2 decomposition performance was slightly lower than that of the catalysts of the invention. The catalyst of Comparative Example 2 exhibited absolutely no NO_2 decomposition performance. The reason is believed to be its structure wherein no catalyst was carried on the ~~monolith~~ filter.

Page 12, table 3:

Table 3 Comparison of particulate matter (PM) combustion rates

	Catalyst		PM combustion rate (mg/sec/L)	
	NO oxidation catalyst	NO_2 decomposition catalyst	200°C	250°C
Example 1	$Pt/WO_3/ZrO_2$	Pt/Ba/γ-alumina	0.04	0.12
Example 2	$Pt/WO_3/ZrO_2$	Fe/γ-alumina	0.04	0.11
Comp. Ex.1	Pt/Ba/γ-alumina		0.012	0.05
Comp. Ex.2	Upstream Pt/silica + monolith filter		0.002	0.006

Catalyst components: (2 g Pt + 0.1 g Rh)/1L <u>filter</u>~~monolith~~